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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/682,363	08/24/2001	Anthony C. Zuppero	22122878-6	9527

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805 THIRD AVENUE
NEW YORK, NY 10022

EXAMINER	
DIAMOND, ALAN D	
ART UNIT	PAPER NUMBER
1753	

DATE MAILED: 01/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

LD

Office Action Summary	Application No.	Applicant(s)	
	09/682,363	ZUPPERO ET AL.	
	Examiner	Art Unit	
	Alan Diamond	1753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 October 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-48* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-48* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *10112004, 10142004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Comments

1. The objections to the drawings, specification, and claims, and the 35 USC 112, second paragraph, rejection of claim 6 have been overcome by Applicant's amendment of the drawings, specification, and claims.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-46 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Fletcher et al, U.S. Patent 4,045,359.

Fletcher et al extracts excess energy from an unstable, vibrationally excited species by contacting the species with the surface of a finely divided solid (see abstract; col. 2, lines 3-11; col. 2, line 67 through col. 3, line 16; and, col. 4, lines 8-22). For example, using the apparatus of Figures 1 or 2, gas reactants A and B absorb energy to form photonically exited species A^* and/or B^*, which in turn react to form an unstable

excited reactant C^* (see the paragraph bridging cols. 2 and 3). C^* is stabilized by transient contact with the passive surface of a finely divided particle (12) during which excess energy is transferred to the surface (see col. 3, lines 2-5). Likewise, said surface can also absorb energy from B^* (see col. 3, line 9). The reactants are exited using a laser light source (col. 2, lines 45-46 and col. 3, lines 17-32), which, it is the Examiner's position, supplies the instant pulse of energy. Since Fletcher et al teaches the limitations of the instant claims, the reference is deemed to be anticipatory.

In addition, the instant requirement of applying a pulse of energy would obviously have been present once Fletcher et al's excitation using a laser is performed. Note In re Best, 195 USPQ at 433, footnote 4 (CCPA 1977) as to the providing of this rejection under 35 USC 103 in addition to the rejection made above under 35 USC 102.

Claim Rejections - 35 USC § 103

5. Claims 47 and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fletcher et al (U.S. Patent 4,045,359) in view of Shinohara et al (U.S. Patent 6,172,427).

Fletcher et al extracts excess energy from an unstable, vibrationally excited species by contacting the species with the surface of a finely divided solid (see abstract; col. 2, lines 3-11; col. 2, line 67 through col. 3, line 16; and, col. 4, lines 8-22). For example, using the apparatus of Figures 1 or 2, gas reactants A and B absorb energy to form photonically exited species A^* and/or B^*, which in turn react to form an unstable excited reactant C^* (see the paragraph bridging cols. 2 and 3). C^* is stabilized by transient contact with the passive surface of a finely divided particle (12) during which

excess energy is transferred to the surface (see col. 3, lines 2-5). Likewise, said surface can also absorb energy from B^* (see col. 3, line 9). The reactants are exited using a laser light source (col. 2, lines 45-46 and col. 3, lines 17-32), which, it is the Examiner's position, supplies the instant pulse of energy. Fletcher et al's photon-induced reaction can be used for catalytic conversion in automobiles with the advantage that platinum is not necessary (see col. 4, lines 8-22). Fletcher et al teaches the limitations of the instant claims other than the difference which is discussed below.

Fletcher et al does not specifically teach extracting a net excess of useful work. Shinohara et al teaches that a thermoelectric device can be fitted to a catalytic converter to generate electricity from heat (see col. 6, lines 13-40). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a thermoelectric device fitted on a catalytic converter that uses the photon-induced reaction of Fletcher et al because a thermoelectric device can be fitted to a catalytic converter to generate electricity from heat.

Double Patenting

6. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

7. Claims 1-48 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-16 of U.S. Patent No. 6,114,620. Although the conflicting claims are not identical, they are not patentably distinct from each other because the use of a pulse of energy, as here claimed, to activate the catalyst surface in the claims of said patent would have been within the skill of an artisan.

8. Claims 1-48 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-6 of U.S. Patent No. 6,222,116. Although the conflicting claims are not identical, they are not patentably distinct from each other because the use of a pulse of energy, as here claimed, to activate the catalyst surface in the claims of said patent would have been within the skill of an artisan.

9. Claims 1-48 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-74 of U.S. Patent No. 6,268,560. Although the conflicting claims are not identical, they are not patentably distinct from each other because the use of a pulse of energy, as here claimed, to activate the catalyst surface in the claims of said patent would have been within the skill of an artisan.

10. Claims 1-48 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-37 of U.S. Patent No.

6,649,823. Although the conflicting claims are not identical, they are not patentably distinct from each other because the use of a pulse of energy, as here claimed, to activate the substrate's surface in the claims of said patent would have been within the skill of an artisan.

11. Claims 1-48 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-25 of U.S. Patent No. 6,678,305. Although the conflicting claims are not identical, they are not patentably distinct from each other because the use of a pulse of energy, as here claimed, to activate the catalyst surface in the claims of said patent would have been within the skill of an artisan.

12. Claims 1-48 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-9 of U.S. Patent No. 6,700,056. Although the conflicting claims are not identical, they are not patentably distinct from each other because the use of a pulse of energy, as here claimed, to activate the catalyst surface in the claims of said patent would have been within the skill of an artisan.

13. Claims 1-48 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-8 and 27-46 of copending Application No. 10/052,004. Although the conflicting claims are not identical, they are not patentably distinct from each other because the use of a pulse of energy, as here claimed, to activate the conducting surface in the claims of said copending application would have been within the skill of an artisan.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

14. Claims 1-48 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-30 of copending Application No. 10/185,086. Although the conflicting claims are not identical, they are not patentably distinct from each other because the use of a pulse of energy, as here claimed, to activate the catalyst surface in the claims of said copending application would have been within the skill of an artisan.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

15. Claims 1-48 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 34-73 of copending Application No. 10/218,706. Although the conflicting claims are not identical, they are not patentably distinct from each other because the use of a pulse of energy, as here claimed, to activate the catalyst surface in the claims of said copending application would have been within the skill of an artisan.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Response to Arguments

16. Applicant's arguments filed October 11, 2004 have been fully considered but they are not persuasive.

Applicant argues that Fletcher et al does not extract "useful energy" in any way and that "Fletcher et al direct the course of reactions and discards the energy as heat." Applicant argues that Fletcher et al explicitly provides that the main function of the particles is to act as an energy sink. However, these arguments are not deemed to be persuasive because the heat is "useful energy" and the heat that heats up said particles is "useful energy". Heat is useful energy whether or not it may be discarded.

Applicant argues that the claims of the instant application are not obvious over the claims of the cited patents and copending applications for obviousness-type and provisional obviousness-type double patenting. However, this argument is not deemed to be persuasive because the Examiner maintains that the instant claims are obvious over the claims of said patents and copending applications.

The Examiner has reviewed U.S. Serial Nos. 09/631,463, 10/759,341 and 10/625,801, which are noted by Applicant on page 21 of the Remarks filed October 11, 2004.

Conclusion

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent Application Publication 2004/0182431 is hereby made of record

18. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

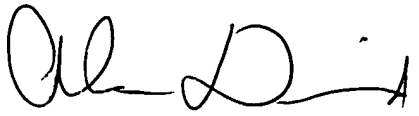
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alan Diamond whose telephone number is 571-272-1338. The examiner can normally be reached on Monday through Friday, 5:30 a.m. to 2:00 p.m. ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on 571-272-1342. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Alan Diamond
Primary Examiner
Art Unit 1753



Alan Diamond
January 18, 2005